APPARATUS AND METHOD FOR DISTRIBUTING FORWARDING TABLE LOOKUP OPERATIONS AMONG A PLURALITY OF MICROENGINES IN A HIGH-SPEED ROUTING NODE

ABSTRACT OF THE DISCLOSURE

A router for interconnecting external devices coupled to the router. The router comprises a switch fabric and a plurality of routing nodes coupled to the switch fabric. Each routing node comprises packet processing circuitry for transmitting data packets to, and receiving data packets from, the external devices and transmitting data packets to, and receiving data packets from, other routing nodes via the switch fabric. The packet processing circuitry comprises a first network processor comprising: i) N microengines for forwarding the data packets, each of the microengines capable of executing a plurality of threads that perform forwarding table lookup operations; and ii) workload distribution circuitry for distributing data packets to the N microengines for forwarding.